Ruptured abdominal aortic aneurysm with aorto-caval fistula

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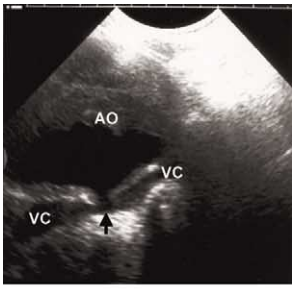
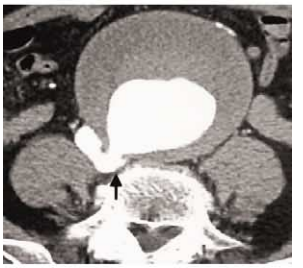
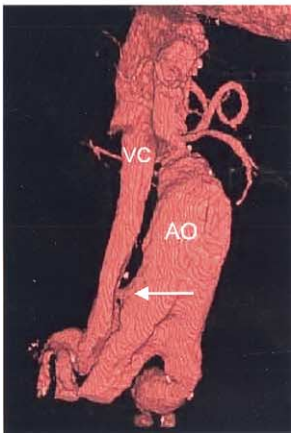
An 81-year-old man presented to a community hospital with intestinal obstruction and lower extremity swelling. Auscultation revealed rare, high-pitched bowel sounds and a continuous abdominal bruit. On ultrasound scanning, an aortic aneurysm measuring 9 cm in diameter with rupture into the vena cava (VC) was suspected (A).

For further evaluation and treatment, the hemodynamically stable patient was transferred to a university vascular surgery division where a multislice spiral computed tomography (CT) scan confirmed the suspected aneurysm with associated aortocaval fistula (B, *arrow*). From the data set, a large stack of axial slices was reconstructed (C [Cover]) and processed offline on a separate workstation, allowing visualization of the fistula just anterior to the fifth lumbar vertebra (D).

The patient was immediately explored through a midline laparotomy. After obtaining proximal and distal control, the aorta was incised and repair of the fistula was performed from within the aneurysm sac with a running suture. Finally, the aneurysm was excluded with a Dacron tube graft. The patient recovered well and was discharged 2 weeks after the procedure.







COMMENT

Spontaneous rupture of an abdominal aortic aneurysm into the VC is a rare complication with a reported overall prevalence of 3% to 6% of all ruptured aortic aneurysms.[1] Preoperative recognition is of paramount importance because congestive heart failure from overtransfusion, inadequate or misplaced incisions, major blood loss, and pulmonary embolization of aneurysmal debris through the fistula can occur if the surgeon is not aware of the fistula. The classic triad of abdominal or low back pain, pulsatile abdominal mass, and machinery-type bruit is not always present.[1] Therefore, the diagnosis is best made by noninvasive testing, such as ultrasonography scanning, including color-flow duplex scanning. The precise site of the fistula is best identified by CT and characterized by VC effacement, loss of the fat plane, and direct inflow of contrast from the aorta to the VC.[2] Moreover, CT not only informs the surgeon of the extent of the aneurysm but also yields information with regard to venous drainage, eg, iliac, renal vein, or vena cava. In a hemodynamically compromised patient, however, there is no time for further evaluation and the diagnosis has to be made on clinical grounds and confirmed in the operating room.

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